

1 **METHOD OF CONTROLLING STRESS IN GALLIUM NITRIDE FILMS**
2 **DEPOSITED ON SUBSTRATES**

3 **ABSTRACT OF THE DISCLOSURE**

4 Methods of controlling stress in GaN films deposited on silicon and silicon carbide
5 substrates and the films produced therefrom are disclosed. A typical method comprises
6 providing a substrate and depositing a graded gallium nitride layer on the substrate having a
7 varying composition of a substantially continuous grade from an initial composition to a final
8 composition formed from a supply of at least one precursor in a growth chamber without any
9 interruption in the supply. A typical semiconductor film comprises a substrate and a graded
10 gallium nitride layer deposited on the substrate having a varying composition of a
11 substantially continuous grade from an initial composition to a final composition formed
12 from a supply of at least one precursor in a growth chamber without any interruption in the
13 supply.

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